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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/734,167 | 12/15/2003 | Yoshihiro Katsumata | Q78821 | 2113 |

23373 7590 02/22/2007

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| EXAMINER | |
|---|---|
| TRAN, THAO T | |
| **ART UNIT** | **PAPER NUMBER** |
| 1711 | |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|---|---|---|
| 3 MONTHS | 02/22/2007 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/734,167 | KATSUMATA ET AL. | |
| | Examiner | Art Unit | |
| | Thao T. Tran | 1711 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *22 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *17-22 and 24-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-22 and 24-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

1. This is in response to the Amendments filed on 11/22/2006. The Affidavit filed on 11/22/2006 has also been considered.

2. Claims 17-22, 24-32 are currently pending in this application. Claims 17 and 32 have been amended.

3. The prior art rejections of the claims are maintained below. Claim 32 is now rejected as unpatentable over Haruta in view of Mochizuki and further in view of Konica Corp.

### *Claim Rejections - 35 USC § 103*

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 17-21, 25-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haruta et al. (US Pat. 5,182,579) in view of Mochizuki et al. (US Pat. 5,477,963).

Haruta discloses an ink storing absorbent material for an ink jet made with a flexible polyurethane foam, where the foam is the reaction product of a polyol, an isocyanate, a catalyst, and a blowing agent (col. 1 lines 54-61). One embodiment shows foams having compression magnifications of 3 and cell numbers of 30-50 per inch (about 30-50 per 25 mm) (col. 15 lines 18-26). Since the ink storing material serves to provide ink to the printer head, the foam is also ink permeable. Haruta teaches a compressed foam with open cells for absorbing ink (col. 2 lines 33-45), also noting that the ink can comprise a surfactant (col. 35 lines 1-3). Thus, because the foam absorbs the ink, the foam would be impregnated with a surfactant when the ink comprises a

surfactant. Note that the surfactant would also be inherently present or adhered on the surface of the polyurethane foam.

Also, since the foams contain a surfactant-containing fluid, it is the examiner's position that the foam would be indistinguishable from a foam made by the applicant's method of claim 21 and containing an ink. In such a case, the surfactant originally adhered to the foam surface would be dispersed in the ink fluid upon contact.

Although Haruta teaches an ink permeable absorbing member, the reference does not teach the inclusion of a second contacting foam having a specific compression magnification.

Mochizuki teaches an ink tank cartridge comprising a porous member having ink impregnated thereon (abstract). The porous member is compressed and may be provided in two or more layers; also, a separate second porous member is mentioned (col. 2 line 64-col. 3 line 11; col. 5 line 62-col. 6 line 4). Preferred porous members are formed of polyurethane foam (col. 5 lines 47-48).

When the porous member contains more than one layer, the pore sizes of the layers differ in that pore sizes closer to the port have smaller pores and thus are more absorbent (col. 9 line 56-col. 10 line 4; col. 9 lines 4-13). When three layers of porous member are used, the least concentrated layer could be considered an ink permeation layer, while the other two layers having increasing absorption and compression could be considered ink absorption layers. It is the examiner's position that it would have been prima facie obvious to adopt the layer structure/porous member plurality of Mochizuki's invention in the ink tanks of Haruta's invention to provide increasing ink flow to the printer head.

Regarding the amount of surfactant impregnated within the ink permeable member, Haruta teaches that additives, including surfactants, are employed in the ink compositions in amounts of 0.01-1% by weight. The ink compositions are impregnated into the foams in various amounts. It is the examiner's position that it would have been prima facie obvious to include the ink containing the surfactant in any amount necessary to provide sufficient ink for printing purposes. The concentration of surfactant impregnated in the foam would vary accordingly.

Regarding the compression magnification, it has been the examiner's position that it would have been obvious to use the structures/porous member pluralities of Mochizuki's invention ink tanks of Haruta's invention. These structures include a number of porous, absorbent layers having increasing compression magnification, where each of the layers is impregnated with ink. The absorbent member foams of the Haruta reference are taught to have various compression values, many of them above 5 (Tables 3-4). Thus, it would have been prima facie obvious to use those foams of higher compression for the high-compression layers in the multi-layered structure to optimize recording and ink mobility of the layers.

Inks used in the invention contain a coloring agent selected from water-soluble dyes or pigments (col. 35 lines 2-7).

6. Claims 22, 24, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haruta et al. in view of Mochizuki et al. as applied to claims 17-21 and 25-26 above, and further in view of Konica Corp.

The references apply as above, teaching foams having ink stored therein but failing to teach denaturated sodium succinate surfactants within the inks. Konica Corp teaches inks for ink jet printers having dialkyl sulfosuccinate compounds added to the inks to provide improved

interval properties (abstract). It is the examiner's position that it would have been prima facie obvious to add denaturated sodium succinate to the inks of the Haruta and Mochizuki invention in any amount necessary to optimize interval properties. Such optimization would provide foams having the claimed surfactant density.

***Response to Arguments***

7. Applicant's arguments filed on 11/22/2006 have been fully considered but they are not persuasive.

In response to Applicants' argument that Haruta does not teach the surface active agent adhered on the surface of the flexible polyurethane foam, it is noted that by teaching the polyurethane foams impregnated with ink that contains a surfactant, Haruta directly teaches the impregnation of the surfactant. Thus, the surfactant would inherently be present on the surface of the foams.

With respect to the Examples in the specification and the Declaration filed on 11/22/2006, these Examples present specific chemicals, such as toluene diisocyanate and tin catalyst, that are not commensurate with the scope of the claims.

Furthermore, regarding Applicants' argument on the use of denatured sodium succinate as the surfactant, it is noted that claim 1 is directed to a surfactant and not a specific surfactant as such.

8. In response to applicant's argument that there is no suggestion to combine the references of Haruta, Mochizuki, and Konica, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed

invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Konica is used to illustrate that denaturated sodium succinate surfactant has been taught in the prior art to provide improved interval properties of inks. Thus, Konica is used to remedy the Haruta combination.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao T. Tran whose telephone number is 571-272-1080. The examiner can normally be reached on Monday-Friday, from 9:00 a.m. - 5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Thao T. Tran
Primary Examiner
Art Unit 1711

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